MARCH 1953

FIREMEN

FIFTY-SEVENTH YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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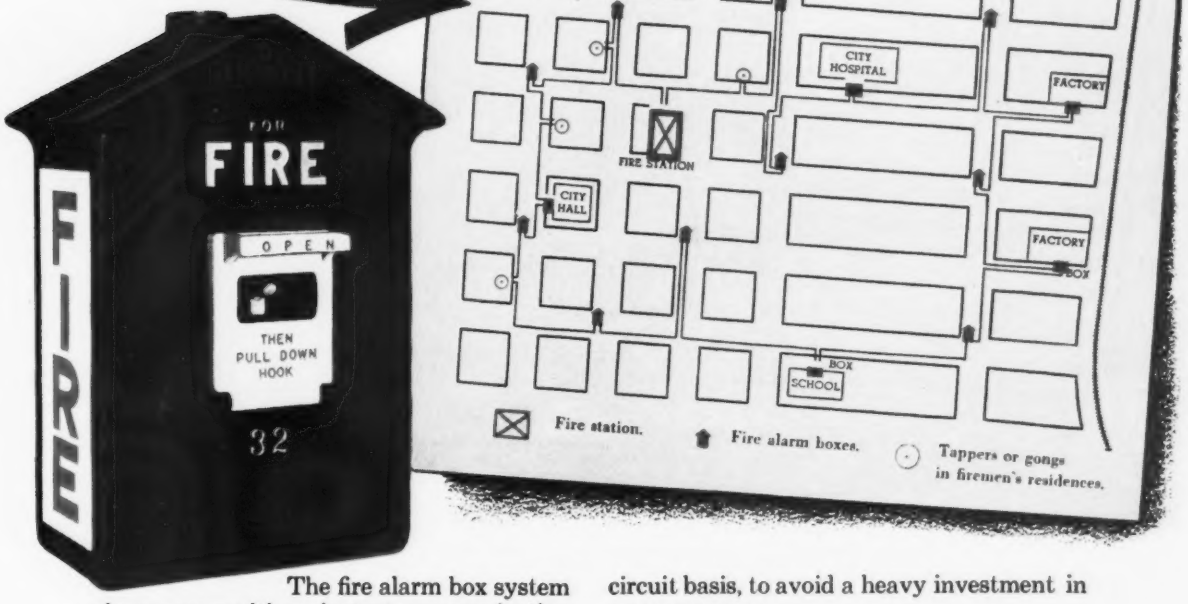

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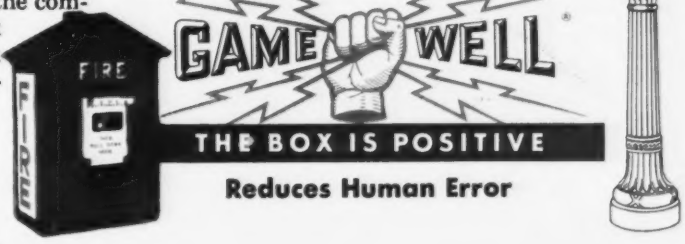

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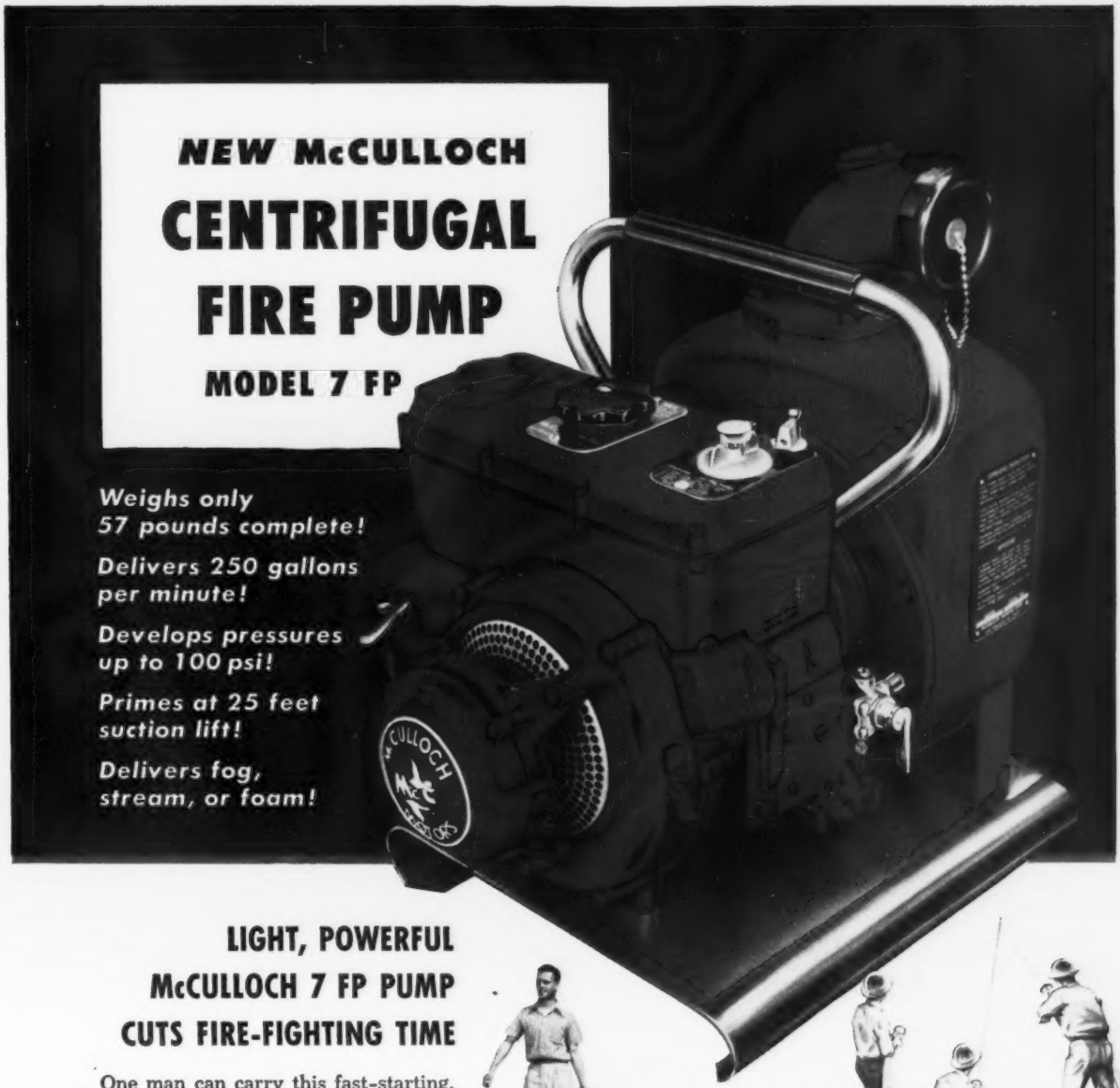

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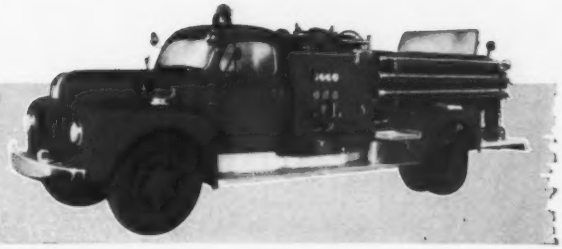

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AKRON BRASS
FIRE FIGHTING EQUIPMENT

Firemen

Volume 20 — Number 3

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PAUL R. LYONS, ASSOCIATE EDITOR
HENRY S. GERE, ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

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NFPA Annual Meeting

The 57th Annual Meeting of the National Fire Protection Association will be held in the Palmer House, Chicago, Illinois, May 18–22, 1953. Readers will note that the dates have been changed from those previously published. The Palmer House will make the necessary adjustments for any members who have previously reserved rooms for the annual meeting.

A local committee of prominent Chicago NFPA members has been appointed under the chairmanship of Elmer Reske, Manager, Cook County Inspection Bureau. Chief Frank McAuliffe of the Chicago Fire Insurance Patrols heads the Sub-Committee on Entertainment while NFPA members Dale Auck, Federation of Mutual Fire Insurance Companies, and Norman Davis, Underwriters' Laboratories, are joint chairmen of the Committee on Publicity and Promotion.

Further details on the program of the 57th Annual Meeting will appear in a forthcoming issue of FIREMEN.

Cover Photo

Members of the North Kingston, Rhode Island, Fire Department, and Navy fire fighters from the Quonset Fire Department, encountered a bothersome flammable liquids fire on the property of the Wickford Oil Company in Davisville on January 16. Fire had started in a truck parked beneath the discharge pipe of a 20,000-gallon tank containing 12,000 gallons of fuel oil. Adjacent to this tank was another 20,000-gallon tank with 9,000 gallons of kerosene. Both tanks, the truck, and a nearby weather shed were involved when fire fighters arrived.

The intense heat melted a bronze valve and a meter on the discharge pipe of the fuel oil tank and approximately 5,000 gallons of oil was flowing freely into the flaming area. Except for aggressive fire fighting and a favorable wind both of the large tanks might have collapsed and ruptured since they were resting on unprotected steel supports. However, an iron globe control valve on the discharge pipe near the fuel oil tank remained operable.

This month's cover picture shows how one of the fire fighters, well covered by fog streams, managed to reach the control valve and stop the flow of oil. Control of the fire was then established by use of fog and straight streams and foam in liquid and powder form. Apparatus used included 3 pumpers and 2 tank trucks from North Kingston and 2 foam units from the Naval station. Fire fighters operated five booster lines, five 1½-in. lines, and two 2½-in. lines with water being supplied from the tank trucks and from draft.

This fire illustrates some details that members of fire departments should consider when inspecting or fighting fires involving aboveground tanks used for storage of flammable liquids. In addition to having adequate venting facilities for "normal breathing" and emergency relief for excessive pressures caused by exposure fires, such tanks should be adequately supported by resting on the ground or on foundations or supports of concrete, masonry, piling or steel. Exposed piling or steel supports should be protected by fire resistive material to provide a fire-resistance rating of not less than two hours. If adequate support is not provided a fire may lead to the collapse and rupture of the tank thus endangering fire fighters and increasing the problem of fire ground control. For further details see page 21. (*Cover photo by George Willis Mason.*)

A Selection of Fire Department Terminology

The Editor of FIREMEN has prepared for the fire service a selection of nearly 1,000 definitions of words and expressions peculiar to the fire service that are likely to be found in FIREMEN magazine from time to time. It is our hope that readers will find this selection helpful, interesting and informative and that it will become a valued addition to the reference shelf of every serious fire fighter.

Each fire department having membership in NFPA will be mailed one paper bound copy of the new publication without charge as a special bonus for member fire departments. Also, a pre-publication offer will make copies available to members for a limited time at $1.50 per copy, which will remain the wholesale price for orders of 10 copies or more. The single copy price is $2.00. (See back cover of this issue).

Ladder Ruined in Paducah, Kentucky, Fire

From a report by Chief Ernest P. Hannin, Paducah, Kentucky, Fire Department

THE searing blast of flame enveloping the upper portions of an aluminum aerial ladder in the picture above meant a serious loss to the Paducah, Kentucky, Fire Department. The ladder had been placed against the involved building while a ladder pipe was being operated into the upper floors. Suddenly an explosion blew out several windows and before fire fighters on the turntable of the aerial could act the ladder was so severely damaged that it could not be lowered. Pictures on the right side of this page show how the ladder weakened and twisted from close exposure to the severe heat.

The unfortunate sequence occurred in Paducah on January 7 when fire involved a department store in a 4-story brick building. Paducah fire fighters, headed by Chief Ernest P. Hannin, responded when an alarm was received by means of direct connection with a sprinkler dry pipe valve in the store. However, although the dry pipe sprinkler system covered about 80 percent of the building area, the principal unsprinklered portion was on the fourth floor where a suspended false ceiling of metal lath and plaster had been installed. Sprinkler protection had not been extended under this ceiling, except in a small closet. It was on this floor that the fire started and apparently had made good headway before the sprinkler alarm operated.

ARRIVING fire fighters found a well-involved building with the fire progressing downwards from the top floor. Wood joists and flooring, open doorways and other unprotected openings aided the rapid spread of flames. Half an hour after arrival of apparatus the walls of the upper stories began falling and an adjoining building was involved by fire. Other close exposures also received damage from heat, smoke and falling materials. Fire fighters operated 5 engines and the ill-fated aerial ladder and covered exposed properties with twelve 2½-in. hose streams.

The intensity of the fire led to successive collapsing of floors and walls. Within an hour only small portions of the walls of the department store were standing. Total fire loss was estimated at more than $1,000,00. Replacing Paducah's aerial ladder will cost about $6,000.

DAMAGE or loss of an aerial ladder is not unexpected by municipal fire departments who have to combat fires in large occupancies. Generally, standard practice requires that men be near an aerial ladder turntable during fire fighting so that the aerial can be moved quickly in an emergency.

When wooden ladders are charred and otherwise damaged during fire fighting, such flaws may be detected upon inspection after return to quarters. Metal ladders, however, have several important characteristics that should be kept in mind.

Readers of FIREMEN can obtain such information from an article entitled "Care of Aluminum Fire Department Ladders" which appeared in the July, 1950, issue. It mentioned practical procedures for handling, inspecting and testing aluminum ladders and stressed the critical temperatures that could affect such metal during fire fighting. According to reports, where temperatures will exceed 150° F., aluminum alloy construction loses strength rather quickly with increasing temperatures. At 500° F. only 15 percent is available of the

(*Please turn to page 25*)

(*At left*) View of the fire in the early stages. Unprotected openings, including an air conditioning duct without fire damper, aided the spread of flames to the adjoining building. (*Right*) Another view of the destroyed ladder. Note that the ladder was bent away from the heat source as the sudden blast of intense heat expanded the metal beams on the exposed side. The truck otherwise was in operating condition but replacement of the ladder will cost about $6,000.

Handling Common Contagious Diseases in an Emergency Ambulance

By William D. Claudy, M.D., Board of Police and Fire Surgeons, Washington, D. C.

Dr. Claudy's articles on Artificial Respiration, which appeared in the October, November and December, 1952, issue of FIREMEN, *evoked such favorable reader response that they have now been combined in a single reprint edition, available from the NFPA Executive Office. In this new series Dr. Claudy discusses what methods and precautions should be followed by rescue squad members who must handle persons infected with contagious diseases. Readers are invited to send questions and comments to the Editors of* FIREMEN, *NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts.*

Part III conclusion

Poliomyelitis (Acute Anterior Poliomyelitis, Infantile Paralysis)

THIS is an acute, infectious disease caused by a filterable virus, characterized by preliminary general symptoms and, in some cases, followed by involvement of the nervous system with characteristic paralyses which are irregularly distributed. This disease has received heavier study than any other in modern history, and the problem still has not been solved. The following facts, however, are fairly well established: The portal of entry of the virus is the gastro-intestinal tract rather than through the nasopharynx as was previously supposed. Direct contact with human carriers or with a patient in the incubative or early stages may transmit the disease. The peak of the disease is between July and October. Its highest incidence is in rural regions, its lowest in the tropics. Flies, fleas, and other insect pests may be carriers. Contamination of food and water by fecal matter may be important. There is some evidence that removal of the tonsils renders children more liable to an attack or makes the attack more severe. Ambulance attendants should avoid close contact about the head and neck of the patient; sheets and other material in contact with the patient should be separated and sterilized before re-use, the ambulance should be aired and scrubbed.

Typhoid Fever

TYPHOID fever may be defined as an acute, generalized infection caused by the bacillus typhosis, characterized clinically by high fever, slow pulse, and general symptoms. Infection occurs when fecal material contaminates water, milk, and food, and carriers are important. Patients are infective through their fecal and urinary discharges during the first ten days. To disinfect the ambulance, airing is sufficient, linens should be boiled. If linens have been soiled with urine or fecal matter, they should be permanently discharged and burned.

Tuberculosis

TUBERCULOSIS — is a chronic, moderately infectious disease caused by the bacillus tuberculosis, usually affecting the lungs, and occasionally other organs. It is transmitted by means of cough droplets. The bacillus is quite resistant to temperature change and to drying, hence, expectorated infected sputum may remain as a potential source of infection for days or even months. Patients should not be permitted to expectorate in public places or in the ambulance compartment. Cardboard sputum cups are usually provided in hospitals caring for this type of disease, and are satisfactory for ambulance use. If not available, the patient should be instructed to use paper tissues, which are then placed in a sturdy paper bag to be burned. Should the ambulance compartment become contaminated, it should be thoroughly washed with Lysol solution. Linens should be boiled.

Syphilis

SYPHILIS is an acute, infectious disease caused by the spirocheta pallidum, almost invariably transmitted by means of sexual contact. The disease is characterized by three stages, a primary or local stage, in which infection is confined to the genital organs; a secondary or florid stage, during which the infection spreads through the body frequently accompanied by a rash, sore throat, and the local lesions on the mouth and lips called mucous patches; and a tertiary or latent stage. Patients may transmit the disease to others by sexual contact during both the primary and secondary stages. Some slight risk is present for ambulance personnel, in restraining violent patients who may have the disease in the secondary stage. Bites and scratches from such an individual may be dangerous. Should this occur, a few simple injections of penicillin will obviate all danger of the disease.

General Comments on Ambulance Procedures

WHEN a case of a known infectious disease is to be transported, ambulances operated by municipal Health Departments or contagious disease hospitals should be used. The greater risk involves the transportation of persons with unknown illnesses who are later found to be suffering from a contagious disease, and it is then that this problem must be handled as a medical one requiring disinfection of equipment and protection of personnel.

In small communities it is frequently necessary to rely on fire department or rescue squad ambulances for the transfer of all seriously ill people. If the case is known in advance to be contagious, personnel should wear old, but clean clothes and should be masked. Equipment not needed should be removed from the ambulance. When the ambulance returns to quarters, if the type of infection is one which might have contaminated the clothing, it should be discarded into a separate container and should be boiled before being laundered. A metal trash barrel may be used for this purpose. Contaminated linen may be removed from the ambu-

(*Please turn to page 30*)

Another Good Stop with "Indirect Application"

From a report by Chief A. Morrison Ennis, Mortlake Volunteer Fire Company, Brooklyn, Connecticut

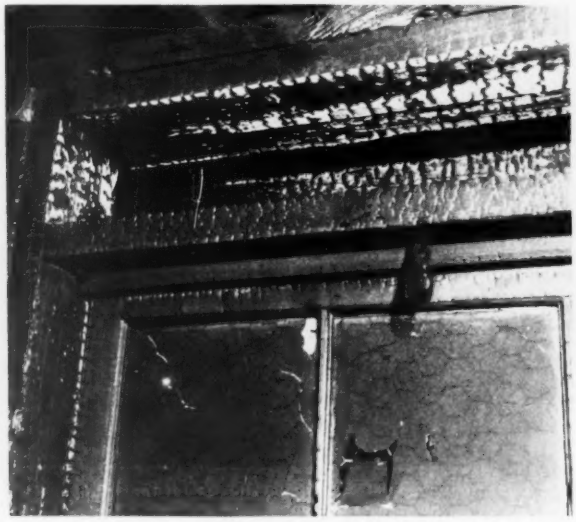
WHEN fire started in this wood frame chicken brooder and spread rapidly over interior walls of combustible fibreboard it gave members of the Mortlake Volunteer Fire Company, Brooklyn, Connecticut, a good opportunity to test the advantage of "indirect application" of water fog. The entire east section of the building, an area of 36 by 60 feet, was in flames when the fire fighters, headed by Chief A. Morrison Ennis, responded to the alarm.

When he "sized up" the fire Chief Ennis decided to use the indirect method of water application described in "Attacking and Extinguishing Interior Fires" by Lloyd Layman. (Obtainable from NFPA Executive Office.) The fire had started because the pilot light was not regulated properly on the brooder system which was supplied by liquefied petroleum gas. Carbon deposits had dropped from the pilot light and ignited dry, shredded sugar cane litter. Flames spread rapidly and the heat became intense enough to melt a light bulb and solder on the plumbing and severely char the interior. When Mortlake members went into action all windows were closed and the LP gas supply had been shut off by the owner of the property.

USING 1½-in. lines equipped with fog nozzles the fire fighters directed streams through a single opening towards the ceiling of the brooder interior. This method converted the water into steam which transferred the heat to the outside and effectively smothered the fire. The application was so efficient that intense deep-seated fire more than 30 feet from the stream was extinguished. A booster line was used for mopping up.

The rapid and successful extinguishment might not have been possible if conventional ventilation methods

Interior of brooder building showing stove where fire originated. Note open gas line over the brooder where rubber hose burned. Gas supply was shut off outside building when fire started.



The intensity of the heat is clearly indicated by this deep charring above one of the windows. The hose streams were applied 30 feet away from this point, yet extinguished fire. Note cracked window.

FIRE REPORT

Date of Fire - Nov. 13, 1952

Time of Alarm - 9:15 AM

THE MORTLAKE FIRE COMPANY
Brooklyn, Connecticut

Time of Recall - 10:15 AM

Location of Fire - U. S. Route 6, 2½ miles west of station

Property owner - Arthur Jones

Owner's Address - Brooklyn, Conn.

Occupant (s) - none

Type of Fire - dwelling, barn, chicken house, rubbish, grass, forest, automobile, truck

Type of building and construction - Wood frame with cello-tex covering

Upon arrival fire involved - East section (36 x 60 feet), interior walls, ceiling and litter on floor. All windows were closed and LP gas supply had been shut off by the owner.

Fire first noticed by - Owner At approx. - 9:10 AM

Cause of Fire - Pilot light too high on brooder. Built up carbon deposit which dropped on to dry, shredded sugar cane litter.

Extent of fire before extinguishing - Charring of interior, melted solder on sweat fitted plumbing, damaged wiring and brooder equipment. Heat was high enough to melt light bulb on ceiling but did not burn litter (except where it started) and newspapers on the floor.

Injured Persons (List names, extent of injury, attending Doctor) - None

HOSE

Feet of hose used - 300 feet of 2½ in., 300 feet of 1½ in., and 100 feet of 1 in.

PUMPS

Pumper - One Mack and one Howe operated 40 minutes each by fire fighters E. Rivais and H. Barnes

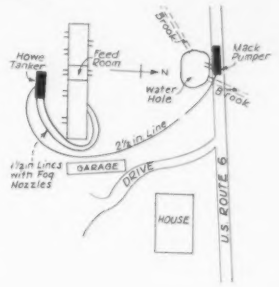
Method of Extinguishing Fire (Extinguishers used, type and number of nozzles used, number of lines on fire, plan of attack used, etc.) - Two 1½ in. fog lines from Howe pumper. First line went in the north door, the second investigated to make certain the fire had not progressed beyond the feed room, which was very smoky, then assisted the first line thru the north door. Fog was applied just below ceiling. No windows were opened. Airpaks were called for because of dense smoke but fire was out by the time they arrived. Booster line used to mop up smouldering litter, rope, etc. The Mack supplied a 2½ in. line to the Howe (hand laid) from a water hole. The supply was coupled at about the same time that the airpak men left and the pump operator on the Howe says that the gage on the tank indicated ½ full. As the fire was out when the airpaks were ready, it is assumed that fire was extinguished with half the 800 gallon capacity of the Howe.

Weather - Cloudy with slight north wind.

Members responding:

Ass't Chief F. Strunk
1st Lieut. F. Kazilunas
2nd " A. Pakulis
Private C. Pakulis
" M. Barnes
" E. Rivais
" E. Rzeznikiewicz
" F. Laureckis
" P. Laureckis
" F. Eggers
" E. Eggers
" E. Ward
Fire Police E. Lapham
" " H. Nunn
Inactive Mem. J. Rukstella

In Charge - A. M. Ennis



Detailed fire report of the Mortlake Volunteer Fire Company. Sketch shows how the Mack pumper was used to draft from a water source and supply a tanker equipped with a Howe pump at the brooder. Initially one of the 1½-in. lines was advanced into the feed room to protect against fire spread, then both lines were used through the same window to extinguish the fire.

had been used. The heat was so strong that "opening-up" would have prevented quick control of flames with the tanker and pumper relay available and major destruction of the property might have ensued. Photos on opposite page show clearly the type of conditions which were overcome by this application of water fog. Shown above is the fire report of the Mortlake Fire Company which contains other details of fire action.

Chief Ennis is a member of the NFPA Committee on Farm Fire Protection and in addition to serving as chief of a volunteer fire company he also is a professional farmer. His fire company three times won the Connecticut Rural Fire Prevention Contest sponsored by the Hartford Mutual Fire Insurance Companies.

Fire Destroys Maine State Fair Exposition Building

DAMAGE of nearly $200,000 was estimated when fire destroyed the State Fair Exposition Building (above) in Lewiston, Maine, on January 6. Starting in a rubbish barrel the fire rapidly involved the 160 by 320 ft. wooden structure which had been converted to contain a roller skating rink, an automobile agency and miscellaneous storage.

Lewiston fire fighters responded to an alarm at 10:53 P.M. but the highly combustible building was fully involved within an hour. High tension wires on the property proved a hindrance to fire fighters until the electric power supply was shut off. Efforts mainly were concentrated on protecting close exposures. Mutual aid assistance was given to the Lewiston Fire Department by fire fighters from Auburn, South Paris and Mechanic Falls departments.

Making a Good Job of It

BY WARREN Y. KIMBALL

Making Every Drop Count When Protecting Exposures

Protecting Exposure with Hose Stream

Solid stream slightly out of range discharged ineffectively into space between buildings while nozzleman kneeling on ground ignores main body of flame which is providing heat which is main source of exposure danger.

INSTRUCTORS in fire department training programs spend long and weary hours teaching exact techniques for laying and handling lines of hose. Unfortunately, however, all too often they get the hoseman on the fireground and then leave him on his own with little instruction on how to make every drop of water count. This may be vitally important, especially during early stages of a spreading fire before adequate help arrives.

Old-time fire fighters learned some of these things from long experience with sweeping fires that were out of control upon arrival, but because modern fire fighters usually get the jump on a blaze while it is still confined and localized, they frequently do not do as well as the old-timers when it comes to getting the most from a line when a fast moving fire threatens exposures.

SOME of the mistakes commonly observed on the fireground include:

1. Failure to concentrate streams on points of greatest exposure threat and consequent waste of water where it does not count.

2. Failure to be aggressive fire "fighters" and use of the stream at ineffective range so that most of its effectiveness is lost, permitting the flames to spread to more fuel and exposed property.

3. Failure to keep the line or stream moving to take advantage of the extinguishing action of the stream and to attack in another spot as soon as the area within reach has been "blacked out".

4. Tendency to waste water by playing on the exposures instead of extinguishing or reducing the flames which are causing the greatest exposure danger. Usually, an occasional dash of water will be sufficient to keep the exposed building below ignition temperature.

5. Failure to employ the type of stream that would be most effective for the job at hand due to lack of understanding of the capabilities of each type of stream.

HAVING made the above observations we advance the following suggestions:

1. At a very large blaze it may be impossible to quickly cool the entire fire area with sufficient speed to counter the exposure hazard. Therefore, where possible, select first the area in which the fire is generating the flame that is heating the exposed property and cool the fire at that point. Usually, this is the point nearest to unprotected combustible property. If the exposure threat is removed at such points the rest of the fire can be allowed to burn out until lines can move in for mop-up.

2. Attack the fire vigorously at the point of greatest danger. Move the line in so that full advantage can be taken of the striking and extinguishing force of the stream, always making certain that a way of retreat is maintained, using a second line for this purpose if necessary. Usually, it will be found that an aggressive attack will black out the fire at the point of greatest danger and that a further advance can be made. In some cases it will be found necessary to attack and retreat several times before a position can be held and secured. Nevertheless, even a short attack within effective range is much more effective than a stream operated out of range. By rotating the men at the pipe no one or two men will take undue punishment.

When moving hose lines into position over any considerable distance and obstacles, movements of the hose crew should be deliberate without excessive speed in order to conserve energy for aggressive fighting of the fire.

3. When hose crews have been assigned to an important position they should be encouraged to exercise initiative within the scope of their assignment. Heat is the greatest danger to exposures and in general the hosemen are in best position to evaluate and attack the areas of excessive heat. Unwarranted supervision of the direction of streams by superior officers (unless the position assigned proves to be ineffective) destroys the initiative of the fire fighter. The company officer should attempt to get the most from his company's line within the position assigned and can report his findings to his superior if a change is necessary or additional support is needed.

4. Because the importance of protecting exposures is appreciated, and stressed, a very serious error has arisen in the technique by which this is accomplished. It is not appreciated that almost the only threat to the exposure comes from HEAT from the burning building or prop-

Identical stage of exposure fire being aggressively attacked with properly adjusted fog cone in hands of skillful and determined hosemen concentrating on reduction of heat and in position to knock down any flame threatening exposure. The natural updraft will carry steam and water particles where they will do the most good.

erty. If the exposure is really serious it may be largely a waste of water to direct any major part of the water on the exposed property. Except where it is necessary to cool pressure vessels, a relatively small application of water from time to time should keep the exposed fuel below its ignition point. (Care should be taken not to break windows.) Most of the water should be directed to cooling the spot where the intense heat is being generated. The situation can readily be appraised by the men on the spot. Frequently ground is lost where chief officers have insisted upon throwing too much water on exposures with the result that fire fighters have been driven from effective positions.

5. Unless very heavy streams of adequate volume and range are available, solid streams may be relatively ineffective in protecting exposures. Solid streams have little "water curtain" effect and their mass in relation to the volume of fire is frequently too small to adequately black out intense fire. Further, they do not provide adequate water surface area for quick generation of steam. A volume of water when converted to steam increases in ratio of 1650 to 1, which is why water exercises its greatest cooling effect when vaporized. This expansion of water into vapor carries the extinguishing and cooling action to adjacent areas, and at the same time flame and heat production is drastically reduced.

BECAUSE the intense heat from an exposure fire prevents close approach and because it is desirable to observe the effects of the stream, experience has shown that a long cone of fog not too far removed from a solid stream in range is desirable for this type of fire, providing the stream has ample mobility. As a matter of fact, the greatest usefulness of the fog principle of fire fighting frequently comes with this type of fire in which solid streams have the most limited usefulness, but the jet must be adequate in volume and properly shaped for the job at hand.

Care must be taken to take advantage of wind direction, air currents, and the tendency of heat and steam to rise.

To illustrate the points covered in this discussion sketches are shown of a fire in a row of wood-frame buildings. A small solid stream is shown in the top sketch being directed between the edge of the fire and the exposed property. Obviously, very little of this water is either extinguishing flame or reducing or intercepting the heat which is the chief threat to the exposure. Apparently little effort is being made to black out the fire that is well within the reach of the stream and which is the true source of danger.

WE NEXT show on this page the same line equipped with a fog nozzle adjusted to provide a long cone of fog. The nozzle is moved 10 or 12 feet nearer to the fire and is in position to black out the flames and also give an occasional dash on the exposure as necessary. The main effect of this stream will be to generate steam and absorb heat in the room or area where the fire is centered, but it also will knock down any exterior extension of flames (dotted lines). This will tend to confine the fire inside the burning building so that its own walls will furnish some exposure protection. The hosemen are on their feet to keep the line mobile. Assuming that a similar effective attack is made from the other side, it will not be more than a few moments before the line would be advanced up the rear stairway (possibly with the fog cone adjusted to a somewhat wider pattern) and would be able to rake the fire at close range. Once the extension of fire has been checked, aggressive use of water will soon drive the fire back. In fire fighting, as in military action, attack or counterattack is the greatest defense. In fact, fire fighting offensive is even more important because fire can only live on new fuel and will quickly die out when driven back from points of contact with unburned materials.

Atomic Energy: The New Force

A BOOK issued last month is entitled "The New Force: The Story of Atoms and People," by Ralph E. Lapp, who has already written a number of articles for popular magazines on related subjects. This book can be recommended as a concise story (234 pages) of the original development of the atomic bomb and of more recent work on atomic power and even greater weapons of destruction. It answers many questions about atomic energy and nuclear research which are frequently puzzling. It may be purchased from the publishers, Harper & Brothers, 49 East 33rd St., New York 16, N. Y., or in book stores, for $3.00.

Making "Fog" Nozzles Do the Job

Recent NFPA publication "Studies of Fire Department Fog Nozzles" provides valuable information for fire fighters on the performance of popular makes of fog nozzles.

THE next time you examine a fire department "fog" or water spray nozzle consider these questions: How will you obtain the best fog from that nozzle? What nozzle pressures will you want to get certain reach and patterns for particular fire fighting jobs? How much water will flow from the nozzle at given nozzle pressures? How does that nozzle compare with other well-known makes?

To obtain answers to such questions, and other important information concerning most of the "name brand" fog nozzles, a group representing the NFPA-IAFC Committee on Fire Department Equipment last year conducted tests at the proving grounds of the American-LaFrance-Foamite Corporation near Elmira, New York. (See FIREMEN for September, 1952). The results of these tests have been presented in an important NFPA publication entitled "Studies of Fire Department Fog Nozzles." This 44-page, amply illustrated booklet provides some informative evidence on characteristics of fog nozzles. It has 178 easily understood pictures of the size shown on this page, so that readers can get vital information on a particular fog nozzle at a glance.

For example, the pictures at right show the nozzles of three major manufacturers. All are of the 2½-in. size and are operated at a setting of 60 degrees with nozzle pressures of 100 pounds. The pictures were taken against the same backdrop with identical wind and climatic conditions. Yet note the difference in fog patterns. It is readily apparent that each fog nozzle has a characteristic pattern since it is designed by the manufacturer to produce a particular conical form and volume of water spray.

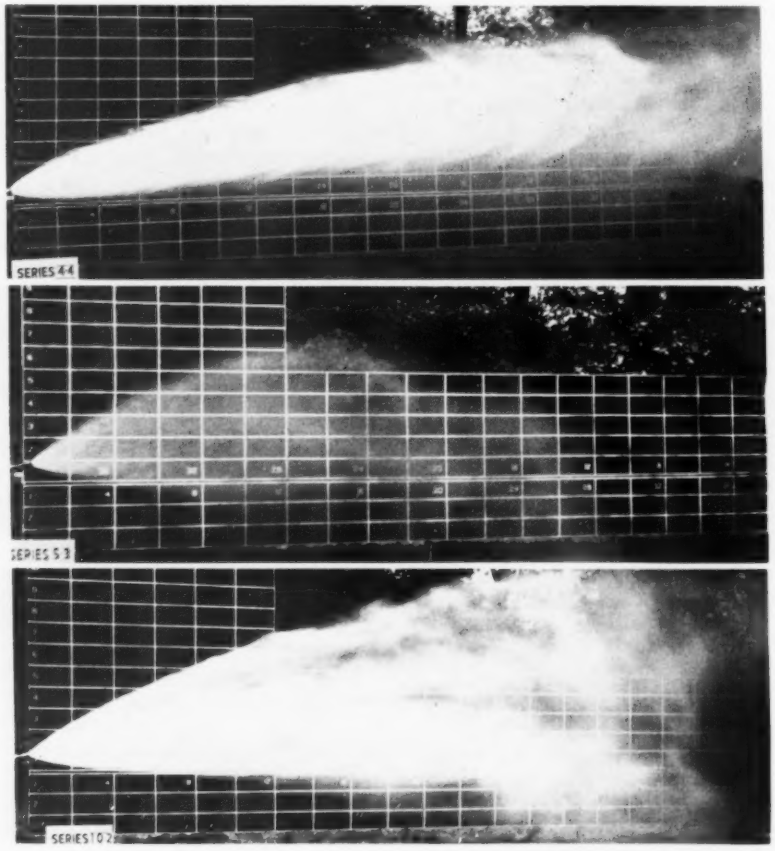
The concentration and size of water particles issuing from fog nozzles is, of course, dependant upon the design. At Elmira, most of the nozzles were operated with settings for 30, 60 and 90 degree fog patterns with nozzle of 50, 100 pressures and 150 pounds.

THERE is considerable difference in the quantities of water that may be obtained from different makes of fog nozzles operating at the same setting and pressure. For example, a certain 1-in. nozzle with a setting of 30 degrees and 150 lbs. nozzle pressure produced 33 gpm while another manufacturer's nozzle of the same size and setting and with the same nozzle pressure of 150 lbs. produced only 20.5 gpm. One 2½-in. nozzle with a 60 degree setting and 100 lbs. nozzle pressure delivered 170 gpm, while another nozzle of the same size and setting, and with the same nozzle pressure delivered 300 gpm.

HOW can you, as a fire fighter, apply such information?

If your department uses fog nozzles in fire fighting, or is considering purchasing some nozzles, you can find some valuable comparisons in the "Studies." It was found, for example, that nozzle pressures of 50 lbs. are too low for practical use in the fog nozzles examined. Pressures of 100 and 150 lbs. gave much better patterns and flows.

As a fire fighter you should consider how much protection a fog nozzle will give you when you are advancing in fire combat, in addition to providing the pattern and reach you need for fire extinguishment. The backdrop used for measuring the fog patterns was marked in 1-ft. intervals for vertical measurement and 2-ft. intervals for horizontal measurement. The pictures readily indicate at what dis-



(At right) Three 2½-in. fog nozzles, each operated at 100 pounds nozzle pressure with nozzle setting for 60 degree fog pattern. *(Top)* Elkhart Brass PLJ-200 with 400 gpm discharge. *(Middle)* Akron Brass Akr-O-Mist with 90 gpm discharge. *(Bottom)* Wornall nozzle with 300 gpm discharge.

tance a particular nozzle gives maximum width and reach of the spray pattern. The gpm flow of every nozzle at the various setting and pressures is also stated.

SUCH information can be of considerable help to fire departments in pre-planning for fire fighting. For example, suppose that your fire department carries two 150 ft. 1½-in. lines preconnected to a pumper and equipped with a certain manufacturer's fog nozzles. From the "Studies" it is known that this particular type of nozzle will deliver 98 gpm in a certain fog pattern when the nozzle is set for a 60 degree cone and there is a nozzle pressure of 100 pounds. Since the flow of 98 gpm through the 1½-in. line causes a friction loss of approximately 32 pounds per 100 feet, the trained pump operator will know how to provide the proper engine pressure (approximately 148 pounds depending upon elevation differences) that will result in the desired fog patterns and reach in the two nozzles.

"STUDIES of Fire Department Fog Nozzles" may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Price is $1.00 per copy. An excellent companion publication to the "Studies" is Lloyd Layman's "Attacking and Extinguishing Interior Fires" which describes up-to-date methods of fog fire fighting. This book also may be obtained from the NFPA Executive Office for $3.75 per copy.

Lowry Is Fire Alarm Consultant

NFPA member L. E. Lowry, for many years in charge of foreign business and advertising for the Gamewell Company, Newton Upper Falls, Massachusetts, is now an independent consultant. He will devote his activities to fire alarm and police signaling systems and with headquarters at 28 Bowdoin Street, Newton Highlands, Massachusetts.

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US ROYAL TEMPERED RUBBER

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Morgan City, La., January 25. (*United Press Photo.*) Damage was estimated at more than $1,000,000 when an explosion occurred in two gas wells of the Pure Oil Company. Flames issued horizontally under high pressure and involved a drilling platform which collapsed. Arrow points to an Army crew of a recoilless 75 mm antitank rifle. Shells were fired through gas well casing in attempts to allow pressure to be released vertically. Eleven days of fire fighting passed before one of the wells was capped successfully.

Fires in the News

(Left) Pawtucket, R. I., January 19. (*George L. Goodreau photo.*) Damage of more than $250,000 was estimated when fire destroyed this 76-year-old church. Cause was assumed to be a short circuit in electrical equipment connected with the organ. A slate roof and brick veneer exterior hampered fire fighters' efforts to apply effective streams on the interior.

(Right) Shreveport, La., January 17. (*Wide World Photo.*) Despite city laws a paper company used this unsprinklered former grain elevator for storing waste paper. Fire started in one of the bales and spread rapidly through unprotected openings and involved other close exposures. Oil and dust deposits on the wooden interior helped flames to spread beyond control when fire fighters responded. Loss was estimated at $135,000.

(Left) Aiken, S. Car., January 27. (*Wide World Photo.*) Ten people were killed and five stores were demolished when leaking gas exploded. Five other persons were injured by fire and falling walls. Estimated damage was more than $1,000,000.

(Right) Little Falls, N. Y., January 28. (*United Press Photo.*) This gasoline trailer was carrying 4800 gallons of gasoline when it skidded, overturned and burst into flame. Seven nearby wood frame dwellings were involved in the fire which fire fighters extinguished with 2½-in. fog nozzles and straight streams after four hours. Damage was estimated at more than $100,000.

(Below) Philadelphia, Pa., January 24. (*United Press Photo.*) The first "8-alarm" fire in 11 years destroyed this paper box plant despite efforts of more than 400 Philadelphia fire fighters. A nearby oil and gasoline distributing plant was protected but total damage was estimated at $1,500,000.

(Below) Chicago, Ill., January 10. (*United Press Photo.*) A loss of $45,000 resulted when fire involved this 5-story brick building used for manufacturing fire extinguishers. Fire fighters extinguished flames with hand lines and turret streams.

NFPA Member Departments

Seaside Fire Department
Seaside, California

HEADED by Chief William Pacchetti, Sr., the Seaside Fire Department has 14 full time paid fire fighters and protects a community of 16,000 population in an area of 6 square miles. The attractive 1-story cement block headquarters shown above houses all apparatus of the department at present but plans call for the building of another fire station of similar design. The Department has a 750 gpm pumper with a 600-gallon water tank, a 500 gpm pumper and a 350 gpm pumper. There is also a chief's car and a jeep available to fire fighters. Chief Pacchetti hopes to obtain a 1,000 gpm pumper in the near future.

All members of the Department have been trained in first aid and have available two resuscitators in addition to other rescue equipment. Training is conducted once each week and members also participate in the California State training schools. *(Photo by Wm. L. Morgan.)*

City of Tucson Fire Department
Tucson, Arizona

WITH 75 full-time paid fire fighters the City of Tucson Fire Department protects a city of 50,500 population and an area of approximately 9 square miles. Chief John C. Sievert heads the Department, assisted by Assistant Chiefs J. H. Freeman and Harold Micka, President H. M. Danielson and Secretary B. J. Oliver.

The Department has a central station which houses headquarters, 2 engine companies, an aerial ladder company and 2 reserve engines. Three other stations include a ladder company and 2 engine companies. Apparatus in service includes a 1950 Seagrave aerial ladder, 3 Seagrave pumpers, an American LaFrance "quad," a Chevrolet panel truck for first aid and rescue, and three cars for fire officers. Two other pumpers are kept in reserve while 3 pumpers and an aerial ladder at present are in storage.

Members maintain an active fire prevention committee and participate in weekly training sessions. Classes are held yearly for the renewal of Red Cross First Aid certificates. A delegate each year is sent to the annual convention of the Arizona State Firemen's Association of which nearly all of the Department are members. Most of the fire fighters are also members of Local No. 479 of the International Association of Fire Fighters.

Hanover Volunteer Hose Company
Hanover, New Hampshire

THIS active volunteer fire company protects a community of 6,000 population which includes the campus and buildings of renowned Dartmouth College. The 33 active fire fighters are headed by Fire Commissioner James Campion, Jr., Chief Carlton H. Nott, Assistant Chiefs S. C. Hazleton and A. P. Stewart, Captain J. M. Hirst, and Secretary R. H. McWilliam. The town of Hanover recently was awarded a reduction in insurance rates as a result of improvements in the fire alarm and water systems and modernization of the fire apparatus.

As shown in the photo above apparatus includes a Chevrolet booster truck, a 1951 Maxim 750 gpm pumper, a 1952 Maxim 75-ft. aerial ladder, a 1938 Maxim pumper and a Ford panel truck equipped with rescue and first aid equipment. The latter truck and one of the pumpers are equipped with two-way radio. Also available is a 500-gallon tank truck and a trailer-mounted rescue boat.

Members of the company participate in monthly drill sessions with special attention being given to the training of pumper and aerial ladder operators. The fire company also participates in a joint drill school and mutual aid plan conducted by the Twin State Fire District Association, which includes neighboring towns in both New Hampshire and Vermont.

Burke Volunteer Fire Department, Inc.
Burke, Virginia

CHIEF M. L. Caudle, Assistant Chief J. R. Brown, President P. C. Kinchelde and Secretary B. F. Boyce are the elected officers of this volunteer fire department with 36 active fire fighters. The Department protects a rural community of approximately 30 square miles including a forested area and a population of about 250. The fire station is a 1½-story cinder block building which houses two 500 gpm pumpers and a special truck with a 125 gpm pump for forest-fire fighting.

A board of directors is elected for administration and consists of 9 members with 3 of the members elected every three years. Training is conducted weekly by Chief Caudle and a paid fire fighter.

Industrial Fire Protection

Flash Fire in Zirconium

A RECENT explosion and flash fire in a metal hydrides plant in Beverly, Massachusetts, where zirconium was being processed, killed two men and injured two others. The metal was being passed through a hammer mill in a wet state. The operation required the material to be processed and canned with enough water to produce a wet fine mud. Suddenly there was an explosion and about 80 pounds of zirconium was involved in a flash fire.

Eleven sprinklers operated promptly and the fire was practically extinguished when fire fighters responded to an automatic alarm. Complete extinguishment was made by hand extinguishers.

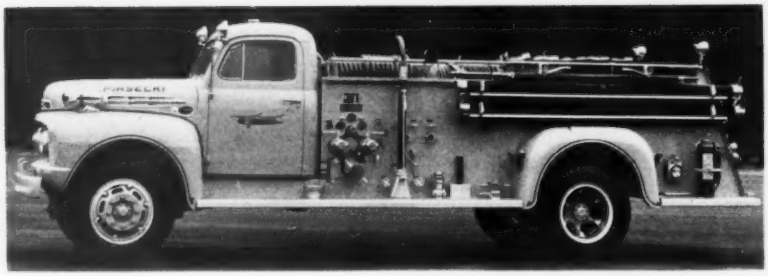
As indicated in the Table of Common Hazardous Chemicals (contained in National Fire Codes, Vol. I, and in the NFPA Handbook of Fire Protection) zirconium is one of the most hazardous of metals. It has low ignition properties, is highly flammable in dry state, and is explosive upon contact with an oxidizing agent. Since the metal in powder form is susceptible to ignition by static electricity explosion hazards also exist when zirconium is subject to dispersion in small particles.

With the increasing use of zirconium in modern industry, plant safety supervisors and fire fighters should be aware of its property hazards, which are similar to those of magnesium. Until a standard is available (now on the agenda of the NFPA Committee on Combustible Hazards), NFPA Pamphlet No. 48 — Standards for Magnesium — may be used as a guide for minimum requirements for safe handling and storage of zirconium.

Available data indicates that fires in zirconium can be controlled by foam or dry sand. Since foam contains water and will be decomposed by the burning zirconium a large quantity of foam must be applied very rapidly to a comparatively small amount of zirconium, and, for the foam to be effective, care must be taken not to spread the burning metal. Carbon tetrachloride, carbon dioxide, and soda and acid extinguishers are ineffective on this material. Fires in small quantities are best handled by allowing them to burn out.

Sprinkler systems are helpful for fires in zirconium in quantities not exceeding 400 to 500 pounds in one fire. Water from sprinklers tends to minimize the fire by wetting and cooling adjacent combustibles.

Quantities of zirconium exceeding 500 pounds should be given special consideration such as storage under water or division into smaller storage units.



Safe Handling of Bromine

SAFETY measures to be employed and regulations to be followed in handling, storing, shipping and disposing of bromine are described in detail in a new safety data sheet, SD-49, published by the Manufacturing Chemists' Association, Inc. First aid measures and medical procedures in case of contact with the chemical are also included.

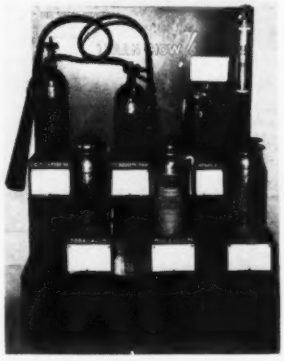
The sharp penetrating odor of bromine gives fair warning of its presence, according to the data sheet, but inhalation of the vapor should be avoided, as it is extremely irritating to mucous membranes, skin and eyes and can cause serious injury to the respiratory tract. The corrosive nature of the material requires strict observance of ICC Regulations relating to containers and warning labels. Bromine is shipped in glass bottles or earthen jugs. It causes an oxidizing effect resulting in heating and may cause fire when in contact with organic material.

Copies of the 16-page data sheet may be obtained for 25 cents from the Manufacturing Chemists' Association, Inc., 246 Woodward Building, Washington 5, D. C.

New Pumper for Piasecki Fire Brigade

THE industrial fire brigade of Piasecki Helicopter Corporation, Morton, Pennsylvania, recently acquired the attractive new fire apparatus shown above, according to Plant Fire Marshal J. J. Stanton. The truck was built by Maxim Motor Corporation according to specifications of Fire Marshal Stanton and was designed for both structural fire fighting and crash rescue work for small aircraft.

The pumper is mounted on a Ford F-7 chassis, has a Hale 3-stage 500 gpm pump, a 500-gallon water tank, and a 25-gallon foam tank. There are also two 150-ft. lines of 1½-in. hose equipped with soreader tips for optional straight stream — fog foam streams and two 250-ft. reels of ¾-in. high pressure hose equipped with Hardie fog guns. The truck is manned by a paid driver and five volunteers from the plant fire brigade. Flight test personnel and plant fire brigade members drill weekly with this truck on a discarded Navy JRF — 6 flying boat hull and spill fires.



This portable fire extinguisher stand is used by the Piasecki Helicopter Corporation for instructing employees. The extinguishers are empty but are clearly labelled so that employees may read the instructions, examine the operating parts and simulate using the extinguishers.

Fire at Wickford Oil Company, Davisville, Rhode Island, (*See page 9*).

(*Upper left*) Fire fighters make initial attack on fire which started in the electric rewind system of the hose reel of a truck at left. Circle encloses discharge pipe of fuel oil tank. Outer valve was of bronze and melted in the intense heat allowing approximately 5,000 gallons of fuel oil to flow into the involved area. (*Upper right*) Picture shows intensity of fire as it fully involves truck, and fire fighters start to apply foam while a straight stream supports the attack at right. (*Lower left*) Arrow points to fire fighter as he tests valve in tank containing kerosene. Application of fog streams aided his approach to the valve. (*Lower right*) Control is established and fire fighters begin to mop up with fog and foam.

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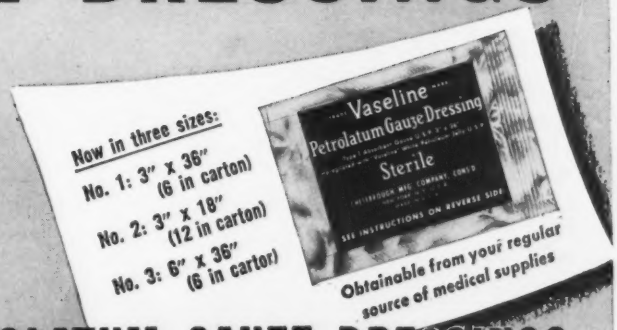
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NINE PLIES OF FABRIC AND RUBBER AT THE VAMP

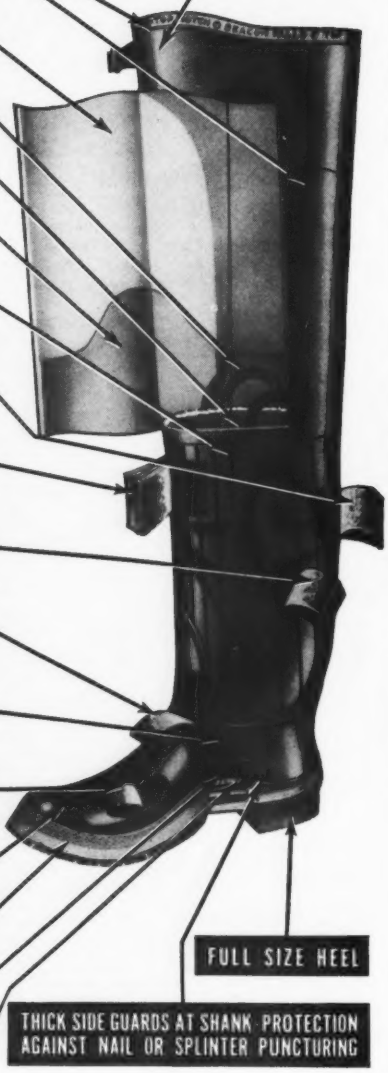
REINFORCING TOE CAP PROTECTION

EXTRA THICK SUPER-QUALITY SOLES

FELT COVERED CUSHION INSOLE

REINFORCED LADDER SHANK

SPECIAL HIP WITH HIGH FRONT SKIRT, ALSO IN SHORT HEIGHT



FULL SIZE HEEL

THICK SIDE GUARDS AT SHANK PROTECTION AGAINST NAIL OR SPLINTER PUNCTURING

BEACON FALLS RUBBER FOOTWEAR
BEACON FALLS, CONNECTICUT

Dates to Remember

Arkansas: The Arkansas State Fire School is scheduled to be held at Little Rock, March 16–18.

Iowa: The 29th Annual Iowa State Fire School will be held on the campus of Iowa State College, Ames, May 18–21.

Kentucky: The Kentucky State Fire School will be held at the University of Kentucky, Lexington, June 9–11.

Minnesota: The Minnesota State Fire School will be held at the Agricultural School of the University of Minnesota, located on the St. Paul Campus, St. Paul. Dates are April 27 through May 1 inclusive.

Oklahoma: The 20th Annual Short Course will be held at Oklahoma Fire College, Ponca City, April 20–24. Subject will be the application of water fog. A two-story six-room house will be burned for training purposes.

Pennsylvania: The 1952 Philadelphia Safety Conference will be held in the Bellview Stratford Hotel in Philadelphia, March 4 and 5.

The Spring meeting of the Keystone State Fire Chiefs Association will be held at Montoursville on May 16. (The Loyalsock Fire Company and the Willing Hand Hose Company will be hosts.

Fire Department Directory

THE Friendship Fire Association with headquarters at Engine 31 of the District of Columbia Fire Department has published a directory of fire companies in that department with the private telephone numbers of each unit. This is likely to be a very popular item for persons interested in contacting fire fighters for unofficial business.

Watch for This!

A FORTHCOMING issue of FIREMEN will contain a valuable guide for the training of fire fighters in the handling of rural fires. It will be published in outline form so that instructors may easily follow its contents as an operational and training guide.

The material was compiled by a subcommittee of the NFPA Committee on Farm Fire Protection which met at the Wisconsin State Vocational School in March, 1952. The outline is already in use in several states as a basis for training rural fire fighters. Its contents are based on actual rural fire fighting practices and will help to fill the demand for information on the specific problems encountered in such training since city training methods are not always applicable to rural problems.

Atlanta, Georgia, Improves Fire Alarm System

BY THE end of 1953 the City of Atlanta, Georgia, will have invested approximately $1,000,000 in the modernization and expansion of its fire alarm system. The renovation was begun in the fall of 1950 with the opening of a 2-story $600,000 Fire Signal Station which serves as the central headquarters of the system, which is designed to service an area of approximately 118 square miles.

According to Chief Signal Engineer W. L. Medlin of the Atlanta Fire Department, approximately 439 fire alarm boxes had been serviced by 1952. Plans call for the installation of additional boxes at the rate of 100 a year.

Cable for the installation was manufactured by National Electric Products Corporation, Pittsburgh, Pennsylvania.

"C'mon, Hogan! He's man's best friend!"

CAIRNS FIRE HELMETS

LEATHER ALUMINUM PLASTIC

REGULATION and DROP BRIM STYLES

Write for Catalog 340

CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

SINCE 1836

The Suit that Suits . . .

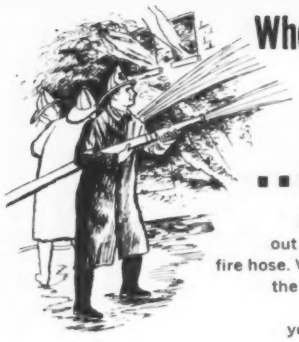
Get real protection along with comfort. Keep warm and dry in any weather. Slip into a GLOBE suit—the suit that has been endorsed by Fire Chiefs everywhere since 1901.

The Globe gives you real lasting wear. It gives you full protection from water and weather—yet plenty freedom of action. It's a quick-hitch suit that is comfortable to wear. See it. Judge it for yourself.

Get the facts from your dealer, or write us for our latest catalog.

GLOBE DURABLE FIREMEN'S SUITS

GLOBE MANUFACTURING CO. PITTSFIELD, N. H.



When your job is drenching wet ...keep dry

Rubber work clothing that locks out wet—even the strong spray of the fire hose. Vulcanized watertight seams give the maximum protection. Here is the on-the-job flexibility and comfort you need . . . plus extra roominess.

U. S. REXFIRE COAT
- vulcanized watertight seams
- protective coating inside and out
- fly-front
- snap and dee ring fastener closings
- corduroy collar

U. S. FIREFIGHTER
- vulcanized watertight seams
- napped lining
- cemented, gum-strapped seams
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- corduroy collar
- throat tab

STORM KING FIREFIGHTER BOOT
- felt lining
- "shockproof"
- white outside

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U. S. INDUSTRIAL RAYNSTERS® U. S. ROYAL RUBBER FOOTWEAR

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Rockefeller Center • New York

Leaping Steeple

When a short circuit occurred in the electrical system of the vestry of this St. Mary's, New Brunswick, church, fire spread rapidly through the wood frame, metal roofed structure. High winds and inadequate water supply prevented fire fighters, headed by Chief J. E. Bastarache, from making an effective stop. During the $105,000 fire loss the force of the wind and the pressure of fire gases toppled the 150-ft. steeple with this unusual "leaping" effect. *(Photos by Basil Day)*

Ladder Ruined In Fire

(*Continued from page 10*)

designed strength that existed at 75° F. Once aluminum ladders are subjected to heat of from 650° F. to 750° F. the metal is annealed and the value of any heat treating process for strengthening would be removed.

While in this fire it was an aluminum alloy aerial ladder that was caught by the flames and damaged, unprotected steel construction (as encountered in many aerial ladders as well as in the structural members of some buildings) also loses considerable strength at high temperatures. When any fire department aerial ladder, wood or metal, has been subjected to conditions that may raise doubts concerning its ability to withstand loads for which the ladder was designed, it should be carefully tested. Detailed procedures for testing such ladders are incorporated in a report recently adopted by the NFPA-IAFC Committee on Fire Department Equipment. This report will soon be made available to the fire service.

100th Anniversary of Cincinnati, Ohio, Fire Department

ON APRIL 1 the Cincinnati, Ohio, Fire Department, headed by Chief Barney J. Houston (NFPA member), will celebrate the 100th anniversary of its organization as a paid fire department. Prior to that date Cincinnati had 18 volunteer fire companies each with approximately 100 members. Chief Miles Greenwood was the first chief to command the paid organization when unification was accomplished.

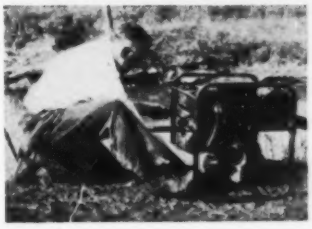
One of the first pieces of fire apparatus acquired by the city after the organization was a five and one-half ton steam fire engine of huge proportions which was named "Uncle Joe Ross" after a member of the City Council who fought to get the $5,000 appropriation needed to purchase the engine. Chief Greenwood once exhibited the apparatus to a delegation from Baltimore, Maryland, and explained that it "never got drunk nor threw brickbats." Its only fault, he affirmed, was that it couldn't vote!

Chief Houston has headed the Cincinnati Fire Department continually since 1916 and is now in his fiftieth year as a fire fighter.

HE PROBABLY THINKS SHE'S AS BEAUTIFUL AS AN ANSUL FIRE EXTINGUISHER..
..YEA..BUT HE'LL FIND SHE'S NOT NEARLY SO EASY TO HANDLE!
ANSUL
J. A. CORTRIGHT

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

Quick-Starting Portable . . . HALE FZZ



The FZZ will supply from draft 60 GPM at 100 lbs. and 100 GPM at 70 lbs. Starts easily and quickly in all types of weather.

Firefighters are pleased with the quick-starting ability of the Hale type FZZ Portable Pumping Unit — an especially valuable feature in freezing weather. The 4-cycle single cylinder 8¼ H.P. engine ensures ease and speed in starting . . . and plenty of power to the direct-connected Hale Pump. NOTE: Discharge adapter available for 2½-inch fire hose.

Many FZZ owners use a Hale 2½" adapter for pumping through a long single 2½" line to a fire distant from source of water. They then wye at the fire and into two 1½" lines providing two capable fire streams.

Write for FZZ Folder. Let us know if your Company wants a demonstration.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

FIRE PUMPS IN ALL STANDARD CAPACITIES

NEW EQUIPMENT
Safety
DEMANDS IT...

CLASS Q SIREN

Specify **FEDERAL**

BEACON RAY LIGHT

Your new apparatus has more speed, more essential equipment . . . it NEEDS the best possible warning signals! Be sure, protect apparatus — and *lives* — with the Federal Beacon Ray, the 360° rotating light rated best on the market, and a Federal Class "C" or "Q"siren, finest, most powerful you can buy!

Accept no substitutes! Inadequate protection is a poor way to pinch pennies! Send now for latest literature that will help you select the BEST POSSIBLE SIGNALS from the industry's most complete selections. Specify by the name . . . Federal!

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for RUGGED DUTY!

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PROTECTIVE CLOTHING

The overwhelming preference for Midwestern Protective Clothing is the result of outstanding performance when the going is tough and the chips are down. The superior quality, design, fabric texture and many exclusive features found in Mackinaw Coats and other Midwestern garments help increase your department's efficiency and provide extra protection for your men at the scene of the blaze.

PROTECTION
COMFORT — SERVICE

You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high-grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

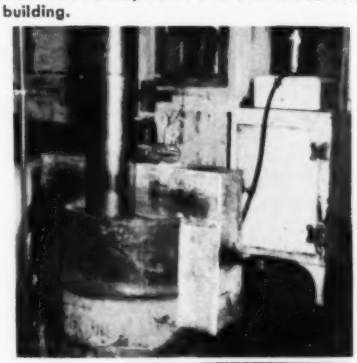
NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois
Manufacturers of the Famous **MACKINAW Coats**

"Exploding" Fire Extinguisher

Chief George Samok of the Palmerton-Pennsylvania, Volunteer Fire Department, forwarded this photograph to FIREMEN.

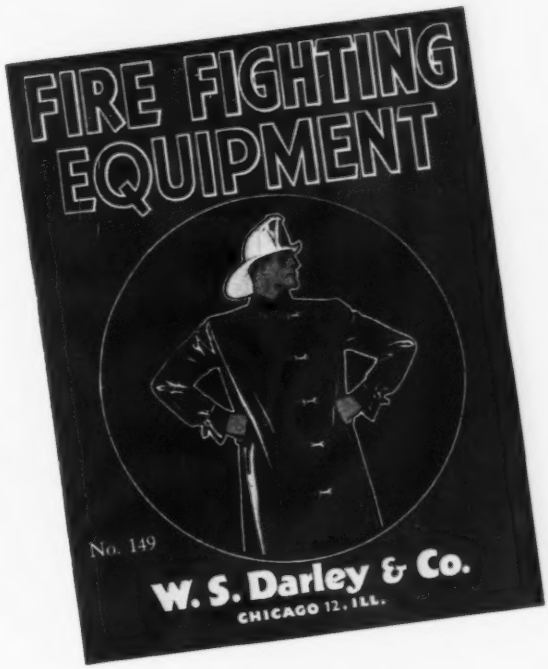
Assistant Chief Lucia of the department, shown in the picture, was inspecting and recharging soda acid extinguishers in a Palmerton factory. While discharging this extinguisher outside of the building Chief Lucia noticed that excessive pressure issued from the nozzle. He placed the chamber on the ground then pinched the hose near the nozzle. The extinguisher "exploded" and the chamber went 150 feet upwards and over a 2½-story building.



Another "Ingenious" Furnace

Fire Marshal Charles H. Howe, Jr. (NFPA member), Montgomery County, Maryland, forwarded these pictures showing an oil-fired "hot air furnace" that the Division of Fire Prevention found being used to heat a garage. Note the "gravity feed" arrangement from the top of the refrigerator. The feed line appears to be a section of automobile heater hose leading into a sediment bulb. Needless to state, the contrivance was replaced by an approved heating installation.

Write Today For This NEW Catalog



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New York City testing a battery of new Waterous-equipped Ward LaFrance fire trucks.

WATEROUS PUMPS PROTECT WORLD'S LARGEST CITY

Protecting New York City's 320 square miles and $26,000,000,000 worth of property calls for the world's biggest fire department.

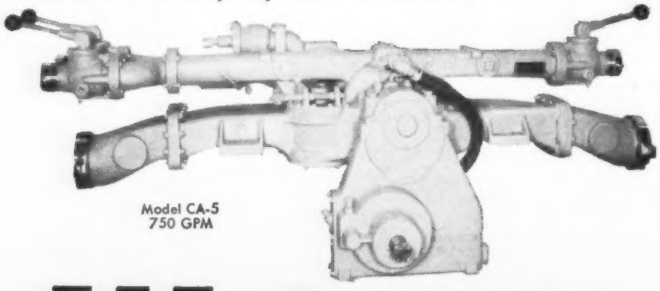
It is only natural that New York should select fire apparatus equipped with WATEROUS pumps. Eighty-nine new WATEROUS equipped fire trucks have been put into service in New York City during recent years, and on January 20, 1953, 49 more were on order.

New York is typical of thousands of cities, both large and small, that rely on dependable WATEROUS Fire Pumps.

Maintenance men prefer WATEROUS pumps because of their simplicity and accessibility. The pump body, for example, is arranged in two sections so that the entire impeller assembly may be lifted out without disturbing the setting of the pump on the chassis. Packing may be adjusted or replaced without disturbing rest of the pump. Hardened steel gears and protected ball bearings help keep wear to a minimum.

Operators prefer WATEROUS pumps because of their sure, quick priming, simple controls, freedom from vibration, and dependable performance.

For further information, write to WATEROUS Company, St. Paul 1, Minnesota.



Model CA-5
750 GPM

Waterous

DEPENDABLE PUMPS

SINCE 1886

80 EAST FILLMORE AVE. • ST. PAUL 1, MINN.

CHIEF Lynn C. Ray, North Park Fire Department, Rockford, Illinois, reports that he has stimulated interest and morale in his fire department with FIREMEN magazine. Chief Ray recently began a contest for his fire fighters with prizes awarded for regular attendance at training sessions and fire calls. Each month members of the department with the best records are awarded shoulder patches or other uniform insignia.

As grand awards fire fighters with the best attendance through the year are awarded the yearly subscriptions to FIREMEN magazine which Chief Ray receives through his NFPA membership. According to a recent letter the contest, coupled with regularly scheduled training lessons, has done much to stimulate enthusiasm among the members of the department.

This is a useful application of the "six-copy" plan of distribution which is available to NFPA member fire

NFPA Welcomes:

The following fire chiefs and fire departments as NFPA Fire Department members:

Arizona: Douglas Fire Department, Douglas; Chief Pete C. Van Haren, Florence Fire Department, Florence; Globe Fire Department, Globe; Nogales Fire Department, Nogales; Tolleson Volunteer Fire Department, Tolleson; Chief Sievert, Tucson Fire Department, Tucson; Yuma Fire Department, Yuma.

California: Hayward Fire Department, Hayward; Chief William Pacchetti, Sr., Seaside Fire Department, Seaside.

Indiana: Gas City Fire Department, Gas City; Chief Kenneth Evans, Lebanon Fire Department, Lebanon.

Iowa: Chief Ira Kohl, Algona Fire Department, Algona; Chief R. Robertson, Boone Fire Department, Boone; Spirit Lake Fire Department, Spirit Lake.

Maryland: Community Fire Company, Inc., Millington.

Michigan: East Ann Arbor Volunteer Fire Department, East Ann Arbor; Horton Volunteer Fire Department, Horton.

Missouri: Chief Harvey L. Baldwin, Kansas City Fire Department, Kansas City.

Montana: Anaconda Fire Department, Anaconda.

departments, or to chiefs of such departments, at no charge other than regular membership dues of $12.50 per year. If more than six (6) subscriptions are desired extra subscriptions cost only $1.25 each.

Whether or not your department wishes to conduct a similar contest to that of Chief Ray's, you should make certain that every member of your department has an opportunity to subscribe to FIREMEN. The magazine may be mailed to the fire station or directly to the individual's home if desired.

When a fire chief or a fire department is enrolling in NFPA for the first time a list of names should be included showing what fire fighters are to receive FIREMEN. When membership is due for renewal additions or changes of this list can be made conveniently.

At present there are 2,017 fire departments and 24,658 fire departments who are enrolled as NFPA Fire Department members.

New Brunswick: Richibucto Fire Department, Richibucto, Kent County.

New Jersey: Peapack-Gladstone Fire Department, Gladstone; Jersey City Fire Department, Jersey City.

New York: Sennett Fire Department, Sennett.

North Carolina: Raleigh Fire Department, Raleigh.

Ohio: Jackson Fire Department, Jackson; Chief A. F. Papenhagen, Toledo Fire Department, Toledo; West Milton Fire Company, Inc., West Milton.

Ontario: Royal Canadian Air Force, No. 6 Repair Depot, Trenton.

Pennsylvania: Conway Volunteer Fire Department, Conway; Gouglersville Fire Company No. 1, Gouglersville.

Rhode Island: United States Rubber Company, Providence.

Texas: Chief Lee H. Price, Clute City Volunteer Fire Department, Velasco.

Virginia: Burke Volunteer Fire Department, Burke; Chief John L. Brenner, Hunterdale Volunteer Fire Department, Franklin.

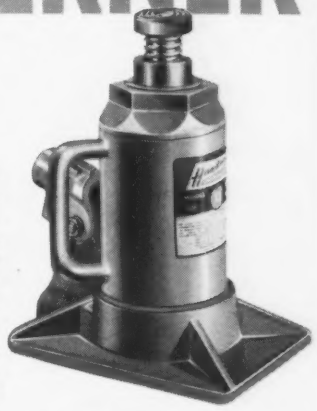
Washington: Chief Overnik, Spokane Fire District No. 6, Spokane.

Wisconsin: Chief Glen J. Davis, Beloit Fire Station No. 1, Beloit; Elmwood Fire Department, Elmwood; Kilbourn Volunteer Fire Department, Wisconsin Dells.

Use the hydraulic jacks you can depend on

HEIN-WERNER

Model E12.9A
12 ton capacity



Whether the job is forcing a door, bracing a weakened structural member, moving a partition, lifting heavy objects, or numerous other emergency tasks, you can count on Hein-Werner Hydraulic Jacks to accomplish the objective quickly, safely, and easily.

Hein-Werner Jacks are ruggedly constructed. They may be used in vertical or horizontal position. Convenient carrying and positioning handles are built in on all models from 12-ton to 100-ton capacity. Positive action valve provides control over pressure release. By-pass valve prevents over-travel of ram. Hydraulic pumping unit is leak-proof.

All Hein-Werner Jacks are factory tested at 1½ times rated capacity. Available in models of 1½ tons to 100 tons capacity. Write Dept. F.

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BETTER HOSE CARE - WITH
CIRCUL-AIR
THE AIR CONDITIONING
FIRE HOSE DRYER

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. No other drying method is so fast—so economical—so easy to use.

Circul-Air Dryers have passed the Approvals Tests and are listed by the Underwriter's Laboratories, Inc., Chicago and the Canadian Standards Association.

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575 East Milwaukee Detroit 2, Michigan

FIRE and POLICE UNIFORMS

SHIRTS
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ACME... *the only Gas Mask with the* "PICTURE WINDOWS"

You never have that "jammed-in" feeling wearing the Acme Full-Vision Gas Mask. Its patented, larger lenses are like picture windows, giving you full natural vision for that safe, unconfined feeling. When you walk, you can actually see your toes without bobbing your head. This factor alone makes Acme outstanding among gas masks . . . well worth looking into.

Write for the complete story on Acme Gas Masks for all Fire Fighting Hazards

ACME PROTECTION EQUIPMENT COMPANY

3037 West Lake Street, Chicago 12, Illinois

GIVEN TO YOUR CHURCH OR LODGE *WITHOUT COST!*

THIS HEAVY DUTY 6-PC. KITCHEN SET

Introductory advertising offer . . . simply sell 36 tubes of wonderful, finest quality Genevieve Bedford's Creme Shampoo at 89c per 5 oz. tube and we'll give you this superb, work-saving kitchen set. It consists of two 16 qt., two 12 qt. and two 8 qt. All-Purpose Cooking Pots of finest quality aluminum.

FINEST QUALITY ALUMINUM

GIVEN TO YOUR CHURCH OR LODGE *Without Cost!*

48-CUP ELECTRIC COFFEE MAKER

Introductory Advertising offer . . . simply sell 48 tubes of wonderful, finest quality Genevieve Bedford's Creme Shampoo at 89c per 5-oz. tube and we'll give you this 48-cup Drip-O-Lator Coffee Urn. Made of pure aluminum, it's easy to use, easy to clean. Ideal for organization use. Makes delicious coffee.

WRITE DEPT. T-1 for details and order blank. No obligation.

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SENSIBLE

FOR ALL YOUR HOSE CONNECTIONS

Double Female Connection

Always Specify By Name "Sensible"

In our line of fire fighting equipment is this double female connection which, among other points of superiority, includes the "Sensible Lug" feature. We also manufacture a double male connection with "Sensible Lugs." The curved surfaces of this modern connection enable the hose to glide easily over all obstructions, thus preventing snagging, an important safety and economy detail appreciated by those who know.

POWHATAN BRASS and IRON WORKS

RANSON, WEST VIRGINIA

Phones 93 & 94 Charles Town West Virginia

Established 1892

Handling Common Contagious Diseases

(*Continued from page 17*)

lance stretcher by placing clean towels over the hands, or rubber gloves may be used. Since the towels become contaminated on the outside once the linen is grasped, they should be discarded into the container at the same time as the linen. If rubber gloves are used, they should be carefully disinfected by soaking in an antiseptic solution after use. Contaminated rubber gloves may be removed without contaminating the hands as follows:

1. With fingers of the right hand, gloved, grasp rubber of left wrist outside, turning down cuff, and strip off glove in one movement, discarding it into antiseptic solution.
2. Insert the clean bare fingers of the left hand *under* the cuff of the right glove and reflect the cuff downward over the right hand. The exposed, clean undersurface may then be grasped by the fingers of the left hand and used to strip this glove off.

Gloves may be soaked in alcohol, Lysol solution, or other sterilizing media for thirty minutes, then rinsed, dried, and powdered with ordinary talc. They are then ready for re-use.

TO STERILIZE the ambulance compartment, a good one to two hour airing is often sufficient. The compartment may then be washed out with a solution of Lysol made by adding three tablespoons to a gallon of water. If the after-odor of Lysol is considered undesirable, or other odors from the patient linger in the compartment, any of several aersolized deodorants available on the commercial market may be used. Tincture of green soap may be used instead of Lysol, and is excellent for cleansing the skin of the attendants as well.

For Sale

1500-gal. water tank semi-trailer for fire service, excellent condition, with enamel-lined tank. Built for water carrying — not a converted gasoline trailer. Large compartments on each side, 2½-inch NST connections.

Write to

Hartville Vol. Fire Department, Inc.
Hartville, Ohio

Personnel of the ambulance who have reason to fear close contact with patients suffering from diseases transmitted by droplet infection, should remove their clothes and take a soap shower. Clothes should be aired for several days. For the next few days, it is wise for such individuals to avoid activity which might lead to exhaustion or fatigue. Any personnel coming in contact with a case of small pox should be re-vaccinated immediately regardless of previous vaccinations. However, cases of small pox are now so rare that this will seldom be necessary.

It is the practice in some communities, when healthy young adults serving on an ambulance are exposed to cases of known virulent meningicoccus meningitis, to administer prophylactic doses of either sulfonamides, penicillin, or one of the newer antibiotics such as aureomycin. This is advisable particularly if there has been known contact close to the head and face of the patient.

Attendants exposed to diphtheria should be Schick tested to see if they are susceptible. Those exposed to scarlet fever may receive the Dick Test. In large active ambulance services, Schick and Dick tests may be determined in advance and susceptibles immunized before contact.

If these precautions are followed, there will be little reason for any person to fear the effects of contagious diseases on himself or of carrying disease home to children and family.

Reprint Available

DR. CLAUDY'S popular series on artificial respiration has been reprinted in a pocket size 16-page pamphlet entitled "Methods of Artificial Respiration." Copies may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Price is fifty cents per copy with discounts for quantity purchases.

(Above) — Ready to go! Scott Air-Paks assure ½ hour minimum duration at extreme exertion. Weight as worn, 29½ lbs.

Greensboro's Fire Chief, C. W. Wyrick, relies on SCOTT AIR-PAKS. With Air-Paks, his men get through smoke to the source of a fire *fast*, before intense heat or crumbling buildings make it impossible. SCOTT AIR-PAKS slip on in seconds, supplying fresh, cool air and relaxed breathing to firemen . . . no matter how tough the going.

Thousands of other forward-looking fire chiefs are using SCOTT AIR-PAKS to eliminate the dangers of breathing hazards.

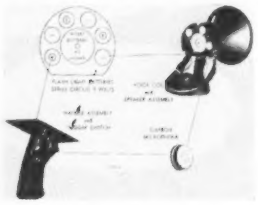
Give your department this protection by asking your Scott Distributor for a FREE DEMONSTRATION now.

For full details on Scott Air-Pak Safety Breathing Equipment, WRITE TODAY for Bulletin 510.

ESTABLISHED IN 1932
Scott
FOR SAFETY—FOR SERVICE

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
236 ERIE STREET LANCASTER, N. Y.
Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

What's New in Fire Equipment?



Portable Power Megaphone

Austin-Lee, Incorporated, 1624 I Street, N.W., Washington, D. C., has developed a light-weight completely portable power megaphone called the "Little Bull." The megaphone employs a standard carbon microphone and is powered by 6 standard flash light or type "D" batteries connected in series. A miniature contact switch mounted in a pistol grip handle puts the electric circuit in action. The entire unit weighs only 5½ lbs. and according to the manufacturer has a range up to one-quarter of a mile. Further information can be obtained from the manufacturer at the above address.

Selective Signaling System

A single tone selective signaling system is being produced by Motorola, Inc., 4545 W. Augusta Blvd., Chicago 51, Ill. The system has been designed for use with communication mediums in industry, public safety, transportation, and utility systems. The function of the system is to allow any operator to initiate an operation at one or more remote points by the selection of a particular receiver or group of receivers in a communication system, by the selection of a particular relay transmitter, by the sounding of an alarm or any other operation that can be remotely controlled by a relay. The components of the single tone system are the 10-button selector box, the single tone oscillator, the three frequency switch kit, and the single one decoder.

Onan Develops New Electric Plant

An air-cooled gasoline powered electric generating plant featuring a new vacuum cooling system with a centrifugal blower has been developed by D. W. Onan & Sons, Inc., Minneapolis 14, Minn. Designated the "CW" model the unit is now being mass produced in 5,000- and 10,000-watt capacities. Complete information may be obtained by writing to the manufacturer. Specify Form A-320 for the 5 kilowatt model 5CW or form A-321 for the ten kilowatt Model 10CW.

Portable "Pak-Fone"

A portable 2-way radio packset for use in fire, police, industrial, utility, and conservation departments has recently been introduced by the Industrial Radio Corporation, 428 N. Parkside Avenue, Chicago 44, Ill. Named the "Pak-Fone" it consists of an 8-tube transmitter and a 15-tube receiver completely self-powered, and is designed to provide a 2-way telephone communication between other portable stations, mobile or fixed stations. Optional power supplies permit the unit to be used as a mobile station with 6-volt automobile battery as the power source or a fixed station using 115 volts AC. The unit is shipped with a weather-resistant carrying case, microphone, crystals, antenna and batteries as standard equipment. Complete description and technical specifications may be obtained by writing to Mr. Harold Heimark, c/o manufacturer.

Booklet on Canvas Tanks

Harodikes Inc., North Dighton, Mass., manufacturers of portable water canvas tanks, have published a new booklet describing the adaptability of their product for use as either primary or auxiliary fire protection equipment in forest areas. According to the manufacturer the water tanks are fabricated of durable heavy canvas duck and are light and flexible enough to be folded into units for back packing by individual fire fighters. Further information may be obtained by writing to the manufacturer at the above address.

HOWE Fire Truck Equipment Meeting Every Service Since 1872
Centrifugal, Rotary, and Piston Pumps supplied
HOWE FIRE APPARATUS COMPANY, 1406 West 22nd Street, Anderson, Indiana

Cold Weather Footwear

A "Thermoboot" designed to protect the wearer's feet in sub-zero weather is being produced by the Techno Efficiency Council, 1 Hanson Place, Brooklyn, New York. The boot utilizes wool and dead air space to provide insulation against cold. According to the manufacturer it is lightweight, waterproof, is washable inside and outside and has cleated soles. It is available in three types: Type F-10 is for temperatures ranging from 10 degrees below zero to 60 degrees above zero; Type SZ-40 is for temperatures from 40 degrees below zero to 60 degrees above zero; and Type HL-5 as low temperature hip-length waders.

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Be sure to say you saw it in **FIREMEN** Magazine

Fire Fighter here discharges FogFOAM onto burning gasoline through 2½" FFF Nozzle.

FogFOAM *puts smothering blanket over flaming liquids*

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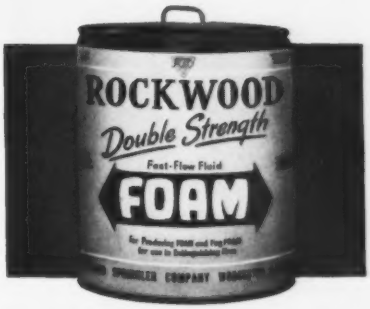
Fleet of Tankers is equipped with FFF Nozzles and proportioning system. Shown here, FogFOAM being discharged on deck and water during test. Ships must be protected from spill fires on water as well as aboard ship.



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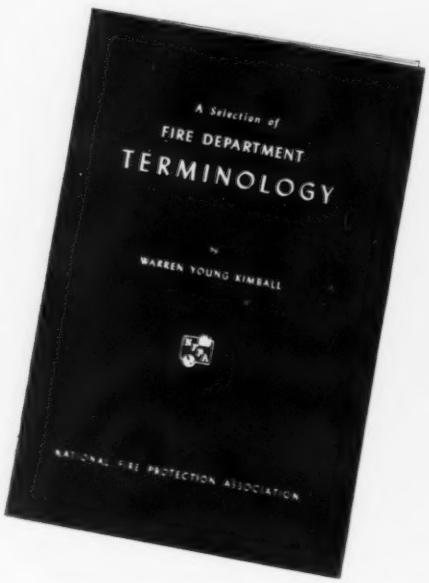

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